

Jrney Docket No.: 01CON346P  
Serial No.: 09/761,033

**List of Claims:**

**Claims 1-27 (cancelled)**

**Claim 28 (currently amended):** A method of encoding a speech signal, said method comprising:

processing said speech signal to generate a plurality of frames, wherein each of said plurality frames includes a plurality of subframes;

coding a previous subframe of said plurality of subframes using Code-Excited Linear Prediction to generate a previous excitation signal; and

applying short term enhancement using said previous excitation signal to enhance a current excitation signal for a current subframe;

wherein said current excitation signal is constructed as a function of a gain, a distance to a peak and a coefficient ~~using an excitation pattern that accounts for a long term correlation in which a true pitch lag is shorter than a subframe size, while detected pitch lag is substantially greater than the true pitch lag.~~

**Claim 29 (previously presented):** The method of claim 28, wherein said short term enhancement is achieved by using several pulses from said previous excitation signal to generate one or more short term enhancement pulses based on short term correlation.

**Claim 30 (cancelled)**

Jorney Docket No.: 01CON346P

Serial No.: 09/761,033

**Claim 31 (previously presented):** The method of claim 28, wherein said short term enhancement is achieved by weighting said previous excitation signal by a current weighting filter to estimate correlation peaks at a distance.

**Claim 32 (previously presented):** The method of claim 31, wherein said short term enhancement determines less than five peaks and gains per each sub-frame from said previous excitation signal.

**Claim 33 (currently amended):** The method of claim ~~31~~ 28, wherein said current excitation signal is constructed using  $P(n) = C \sum_i G_i \cdot \delta(n - T_i) + \delta(n)$ , where  $G_i$  is a gain,  $T_i$  is a distance for an  $i$ th peak, and  $C$  is a coefficient, wherein  $T_i$  is smaller than pitch period.

**Claim 34 (previously presented):** The method of claim 33, wherein gains and distances are calculated by maximizing correlations of previous excitation signals in a weighted speech domain.

**Claim 35 (previously presented):** The method of claim 33, wherein short term enhanced excitation is generated by performing a convolution operation of  $P(n)$  with said excitation signal.

**Claims 36-37 (cancelled)**

Jorney Docket No.: 01CON346P

Serial No.: 09/761,033

**Claim 38 (currently amended):** An encoder for encoding a speech signal, said encoder comprising:

a speech processing circuitry configured to process said speech signal to generate a plurality of frames, wherein each of said plurality frames includes a plurality of subframes;

a coding circuitry configured to code a previous subframe of said plurality of subframes using Code-Excited Linear Prediction to generate a previous excitation signal; and

a short term enhancement circuitry configured to apply short term enhancement using said previous excitation signal to enhance a current excitation signal for a current subframe;

wherein said current excitation signal is constructed as a function of a gain, a distance to a peak and a coefficient ~~using an excitation pattern that accounts for a long term correlation in which a true pitch lag is shorter than a subframe size, while detected pitch lag is substantially greater than the true pitch lag.~~

**Claim 39 (previously presented):** The encoder of claim 38, wherein said short term enhancement is achieved by using several pulses from said previous excitation signal to generate one or more short term enhancement pulses based on short term correlation.

**Claim 40 (cancelled)**

**Claim 41 (previously presented):** The encoder of claim 38, wherein said short term enhancement is achieved by weighting said previous excitation signal by a current weighting filter to estimate correlation peaks at a distance.

Jrney Docket No.: 01CON346P  
Serial No.: 09/761,033

**Claim 42 (previously presented):** The encoder of claim 41, wherein said short term enhancement determines less than five peaks and gains per each sub-frame from said previous excitation signal.

**Claim 43 (currently amended):** The encoder of claim 41 ~~38~~, wherein said current excitation signal is constructed using  $P(n) = C \sum_i G_i \cdot \delta(n - T_i) + \delta(n)$ , where  $G_i$  is a gain,  $T_i$  is a distance for an  $i$ th peak, and  $C$  is a coefficient, wherein  $T_i$  is smaller than pitch period.

**Claim 44 (previously presented):** The encoder of claim 43, wherein gains and distances are calculated by maximizing correlations of previous excitation signals in a weighted speech domain.

**Claim 45 (previously presented):** The encoder of claim 43, wherein short term enhanced excitation signal is generated by performing a convolution operation of  $P(n)$  with said excitation signal.

**Claims 46-47 (cancelled)**

**Claim 48 (new):** The method of claim 28, wherein said current excitation signal is constructed using an excitation pattern that accounts for a long term correlation in which a true pitch lag is shorter than a subframe size, while detected pitch lag is substantially greater than the true pitch lag.

Journey Docket No.: 01CON346P

Serial No.: 09/761,033

**Claim 49 (new):** The encoder of claim 38, wherein said current excitation signal is constructed using an excitation pattern that accounts for a long term correlation in which a true pitch lag is shorter than a subframe size, while detected pitch lag is substantially greater than the true pitch lag.